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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/942,736

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Horst-Udo Hain

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03/02/2006

STAAS & HALSEY LLP

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WASHINGTON, DC 20005

EXAMINER

AZAD, ABUL K

ART UNIT

PAPER NUMBER

2654

DATE MAILED: 03/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/942,736

Applicant(s)

HAIN, HORST-UDO

Examiner

ABUL K. AZAD

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-11 and 1318 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-11,13-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This action is in response to the communication filed on December 27, 2005.
2. Claims 1, 3, 5-11 and 13-18 are pending in this action.
3. The applicant's arguments with respect to claims 1, 3, 5-11 and 13-18 have been fully considered but they are not deemed to be persuasive. For examiner's response to the applicant's arguments or comments, see the detailed discussion in the Response to the Arguments section.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 5, 6, 8-11, 13, 14 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin et al. (US 6,076,060).

As per claim 1, Lin teaches, "a method for speech synthesis by a grapheme/phoneme conversion", comprising:

"searching for subwords of a given word in a database which contains phonetic transcriptions of words, the given word having a subword registered in the database, and a further constituent which is not registered in the database" (Fig. 5, elements , 33 and 34);

“selecting a phonetic transcription from the database for the subword” (Fig. 5, element 20);

“phonetically transcribing the further constituent of the given word with the aid of an out- of-vocabulary (OOV) treatment, the out-of-vocabulary (OOV) treatment for phonetic transcription of the further constituent is performed as a function of the phonetic transcription of the subword” (Fig. 6, elements 67, 68 and elements 30, 31 and 32); and

“combining the phonetic transcription of the subword and the phonetic transcription of the further constituent” (col. 14, lines 23-56).

As per claim 3, Lin teaches, “wherein the given word has at least first and second subwords registered in the database, a search is made for both the first and second subwords in the database, a phonetic transcription is selected from the database for both the first and second subwords, and the phonetic transcription of the first and second subwords and the phonetic transcription of the further constituent are combined” (Fig. 5, elements 33 and 34),

“the further constituent in the given word is arranged between the first subword and the second subword, and the out-of-vocabulary (OOV) treatment for phonetic transcription of the further constituent is performed as a function of the phonetic transcription of the first subword and the phonetic transcription of the second subword” (Fig. 6, elements 30, 31 and 20).

As per claim 5, Lin teaches, "wherein the searching for subwords in the database is pedormed by searching for subwords which have a prescribed minimum length" (col. 7, lines 24-42).

As per claim 6, Lin teaches, "wherein if a plurality of subwords are found for the same word part, the longest subword is selected therefrom" (col. 11, lines 12-34).

As per claim 8, Lin teaches, "wherein the out-of-vocabulary (OOV) treatment for phonetic transcription of the further constituent is performed by a rule-based method" (Fig. 6, elements 30, 31 and 32).

As per claim 9, Lin teaches, "wherein the subword is found in a first database, and the out-of-vocabulary (OOV) treatment for phonetic transcription of the further constituent is performed by a second database which contains the phonetic transcription of filling particles normally used in the case of composite words" (Fig. 6, element 30, 31 and 32).

As per claim 10, 11, 13, 14 and 18, they are interpreted and thus rejected for the same reasons set forth in the rejection of claims 1, 3, 5, 6, 8 and 9.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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7. Claims 7 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (US 6,076,060) as applied to claims 1 and 14 above, and further in view of Karaali et al. (US 5,913,194).

As per claims 7 and 15, Lin does not explicitly teach, phonetic transcription further performed by a neuron network. However, Karaali teaches, phonetic transcription performed by a neuron network (Abstract). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to use neural network because Karaali teaches his invention reduce size of the neural network without substantial degradation in the quality of the generated synthetic speech (col. 2, lines 8-12).

As per claim 16, Lin teaches, "wherein the out-of-vocabulary (OOV) treatment for phonetic transcription of the further constituent is performed by a rule-based method" (Fig. 3, element 27).

As per claim 17, Lin teaches, "wherein the subwords are found in a first database, and the out-of-vocabulary treatment for phonetic transcription of the further constituent is performed by a second database which contains the phonetic transcription of filling particles used in the case of composite words" (Fig. 3, elements 30, 31, 32 and 20).

***Response to Arguments***

8. The applicant argues at page 6 and 7 of the remarks that Lin does not disclose a method for speech synthesis by grapheme/phoneme conversion, where out-of-vocabulary treatment for phonetic transcription of the further constituent is performed as a function of the phonetic transcription of the subword.

The examiner disagrees with the applicant's above assertion because Lin teaches the limitation at col. 15, line 42 to col. 16, line 24. Here, at Figure 5 and 6, the phonetic transcription is done by a function of the phonetic transcription of the subwords such as suffix, prefix and infix.

***Contact Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abul K. Azad** whose telephone number is **(571) 272-7599**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richemond Dorvil**, can be reached at **(571) 272-7602**.

Any response to this action should be mailed to:

**Commissioner for Patents**

**P.O. Box 1450**

**Alexandria, VA 22313-1450**


Or faxed to: **(571) 273-8300**.

Hand-delivered responses should be brought to **401 Dulany Street, Alexandria, VA-22314** (Customer Service Window).

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 25, 2006



Abul K. Azad  
Primary Examiner  
Art Unit 2654